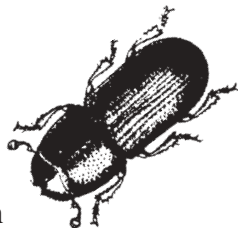
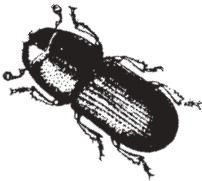





# ***Finding Those Bugs:*** **Using** **Global Positioning Systems** **in** **Southern Pine Beetle** **Detection**



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**S**outhern Pine Beetles kill on the average \$10 million worth of timber each year in Alabama. This economical impact far exceeds any other damaging agent in the state, including wildfire. The control of any Southern Pine Beetle infestation starts with detection. You have to find them before you can control them. The Alabama Forestry Commission (AFC) is charged by law to detect insect and disease infestations, determine the landowner, and contact the landowner with recommended control measures. Since 1997, the Alabama Forestry Commission has used a type of Global Positioning System (GPS) to record the location of the SPB infestations.

The GPS unit installed in the AFC aircraft communicates with satellites orbiting the earth. By "locking on" to several satellites at one time the latitude and longitude of the location can be determined and this information is stored in the GPS unit. The pilot and/or observers scan the forest through windows of the aircraft for SPB infestations and the pilot flies directly over the spot and records the location. Each county in Alabama is flown over (by region) four

times during a year. After a county flight has been completed, the SPB infestation data on the GPS is "downloaded" into a computer. This data is then transferred to a contractor who has a Geographic Information System (GIS) and the data from the GPS is displayed on a topographic map. Any information from the airplane can be overlaid on a map and printed out in any size. The Forestry Commission is presently using the Southern Company GIS, based in Birmingham as its contractor. Hopefully in the near future the Forestry Commission will have the GIS capabilities to print these maps without contracting this service.

The contractor is sent the GPS data and it is converted into maps. They furnish a large county map and smaller individual 8 X 11 maps of each infestation. After the state has completed each of the four flights, the contractor furnishes a large state map of all counties with SPB infestations and web-based maps of the AFC regions. The county maps and topographic maps with the SPB spot prominently centered on the page are sent to the County Forester. The County Forester enters the SPB spot information

into a computer data management program where the spot can be tracked until the infestation is controlled. This system allows the Forester to determine the number of active infestations in his county and to work with landowners who are having a problem getting their spots controlled. After entering the SPB spot data a letter is generated to all landowners who have active spots encouraging them to control the infestation as soon as possible. They are also sent an information packet containing the color map, control measures, and potential timber buyers who do SPB control work.

This GPS/computer mapping-based system has not only increased detection accuracy and efficiency, increased the percent of the spots controlled, and reduced man-hours expended, but it also gives a professional product and has set the standard for other states to follow in SPB detection efforts. If you as a landowner want to know more about SPB detection in your county, contact your local county Alabama Forestry Commission office. 🐞

